

**WHAT IS CLAIMED IS:**

1. A device for controlling the brightness of an optical signal overlaid on a specimen image, for example in a microscope, having a main beam path (1, 2, 6), a main objective (12), a main light source (11), **[and]** a beam splitter. (23) for reflecting image data into the main beam path (6), wherein the illumination for the reflected-in image (4) can be generated on a transmitted-light basis, in particular by means of a transmitted-light display (21), selectably directly or indirectly by way of the main light source (11) and/or a second light source (18) controllable as a function of the main light source.
2. The device as defined in Claim 1, wherein the illumination for the reflected-in image can be generated selectably by the main light source (11) or by the light reflections of the main light source (2) from the specimen.
3. The device as defined in Claim 1 and/or 2, wherein an optical prism (17), a mirror, or the like is provided for switching between the main light source and reflected-in image light source.
4. The device as defined in one of the foregoing claims, wherein the beam path of the main light source (11) is divided by means of a beam splitter into a reflected-in image beam path (3) and a specimen illumination beam path (1).
5. The device as defined in one of the foregoing claims, wherein the brightness of the reflected-in image light source (18) is controlled electronically, but preferably in mechanically overwritable fashion.
6. The device as defined in one of the foregoing claims, wherein the light wavelength of the reflected-in image light source (18) is adjustable.

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7. The device as defined in one of the foregoing claims, wherein the brightness of the reflected-in image is controllable by means of a shutter (19) and/or a diaphragm.
8. The device as defined in one of the foregoing claims, wherein the intensity of the reflected specimen light can be amplified, in particular by way of an additional light source or an electronically controlled residual light amplifier.
9. The device as defined in one of the foregoing claims, wherein a reflective display (32) or an incident-light display, for example a D-ILA display (32), is provided for the reflected-in image instead of a transmitted-light display (21).
10. The device as defined in one of the foregoing claims, wherein a preferably controllable portion of the reflected specimen light can be directed via a separate beam path (3) onto the transmitted-light display or incident-light display, and the specimen can be imaged thereon, optionally in unsharp fashion.
11. The device as defined in Claim 10, wherein the specimen image on the display is adjustable; and/or a diffusion disk (25) or the like is arranged on the side of the transmitted-light display facing the specimen.
12. The device as defined in Claim 10 or 11, wherein an additional light source (18) can be superimposed into the display illumination beam path.

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